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exposing at least a portion of the surface of the microelectronic substrate by removing a portion of the encapsulating material in direct contact with the surface of the microelectronic substrate with the microelectronic substrate in an operable condition after the portion of the encapsulating material is removed.

2. The method of claim 1 wherein the microelectronic substrate has a first surface and a second surface facing opposite the first surface, the first surface having a plurality of bond sites for electrical connections to the microelectronic substrate, and further wherein exposing a portion of a surface of the microelectronic substrate includes exposing a portion of the second surface of the microelectronic substrate.

3. (Amended) The method of claim 1, further comprising:

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mounting the microelectronic substrate to a support member with a first surface of the microelectronic substrate facing the support member and a second surface of the microelectronic substrate facing away from the support member;

electrically coupling the microelectronic substrate to the support member;

disposing the encapsulating material adjacent to both the microelectronic substrate and the support member; and

exposing at least a portion of the second surface of the microelectronic substrate by directing laser radiation toward the portion of the encapsulating material in direct contact with the second surface to ablate the portion of the encapsulating material.

4. The method of claim 1, further comprising:

selecting the microelectronic substrate to include a memory chip;

mounting the microelectronic substrate to a printed circuit board; and

disposing the encapsulating material adjacent to both the printed circuit board and the microelectronic substrate.

5. The method of claim 1, further comprising transferring heat directly away from the exposed portion of the surface of the microelectronic substrate.

6. The method of claim 1, further comprising convectively transferring heat directly away from the exposed portion of the surface of the microelectronic substrate.

7. The method of claim 1 wherein removing a portion of the encapsulating material includes directing laser radiation toward the encapsulating material.

8. The method of claim 1 wherein removing the portion of the encapsulating material includes directing a laser beam having a power of from about 4 watts to about 25 watts toward the encapsulating material.

9. The method of claim 1 wherein removing the portion of the encapsulating material includes sequentially removing layers of the portion of the encapsulating material by sequentially exposing the layers of encapsulating material to laser radiation.

10. (Amended) A method for packaging a microelectronic substrate, comprising:

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6 disposing an encapsulating material in direct contact with the microelectronic substrate; and

forming a heat transfer structure in an external surface of the encapsulating material by manipulating at least a portion of the encapsulating material in direct contact with the microelectronic substrate to define at least one exposed heat transfer surface of the heat transfer structure.

11. The method of claim 10 wherein manipulating at least a portion of the encapsulating material includes removing a portion of encapsulating material by directing laser radiation toward the encapsulating material.

12. (Amended) The method of claim 10 wherein the microelectronic substrate has a first surface and a second surface facing opposite the first surface, the first surface having a plurality of bond sites for electrical connections to the microelectronic

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substrate, and further wherein manipulating at least a portion of the encapsulating material includes removing a portion of the encapsulating material in direct contact with the second surface of the microelectronic substrate.

13. The method of claim 10, further comprising:
mounting the microelectronic substrate to a support member;
electrically coupling the microelectronic substrate to the support member;
disposing the encapsulating material adjacent to both the microelectronic substrate and the support member; and
removing at least a portion of the encapsulating material from a region proximate to the microelectronic substrate.

14. The method of claim 10 wherein manipulating the encapsulating material includes removing a portion of the encapsulating material to expose a portion of a surface of the microelectronic substrate initially covered by the encapsulating material.

15. The method of claim 10 wherein forming a heat transfer structure includes forming a cylindrical rod of encapsulating material projecting away from the microelectronic substrate.

16. The method of claim 10 wherein forming a heat transfer structure includes forming a rib projecting away from the microelectronic substrate.

17. (Amended) A method for packaging a microelectronic substrate, comprising:

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positioning at least one of an encapsulating material and a support member adjacent to the microelectronic substrate; and

processing the support member to have an interlocking feature by manipulating a portion of the support member, the interlocking feature being configured to engage with a corresponding interlocking feature of another microelectronic substrate package.

18. (Amended) The method of claim 17 wherein manipulating a portion of the support member includes directing laser radiation toward the support member to ablate the portion of the support member.

19. (Cancelled)

20. (Amended) The method of claim 17 wherein processing the support member includes forming a recess in the support member.

21. (Cancelled)

22. (Amended) The method of claim 17 wherein the microelectronic substrate is electrically coupled to the support member and the interconnecting feature is a first feature formed in the support member, and wherein the method further comprises processing the encapsulating material to form a second interconnecting feature configured to engage the first interconnecting feature of another microelectronic substrate.

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. A method for packaging a microelectronic substrate, comprising:
electrically coupling the microelectronic substrate to a support member having a first surface and a second surface facing opposite the first surface, the first surface having a conductive bond pad;
positioning the support member and the microelectronic substrate between two portions of a mold with the first surface and the bond pad of the support

member facing a first cavity in the first portion of the mold and the microelectronic substrate facing a second cavity in the second portion of the mold;

disposing an encapsulating material in the first and second cavities of the mold to engage the microelectronic substrate and the bond pad; and

removing a portion of the encapsulating material covering the bond pad to expose the bond pad while the microelectronic substrate remains in an operable condition.

27. The method of claim 26, further comprising:

aligning a first edge of the first cavity with a second edge of the second cavity; and

rigidly supporting the support member in the mold by clamping the support member between the first and second edges.

28. The method of claim 26 wherein removing the portion of the encapsulating material includes directing laser radiation toward the encapsulating material and ablating the portion of the encapsulating material.

29. The method of claim 26 wherein removing the portion of the encapsulating material includes directing a laser beam having a power of from about 4 watts to about 25 watts toward the encapsulating material.

30. The method of claim 26 wherein removing the portion of the encapsulating material includes sequentially removing layers of the portion of the encapsulating material by sequentially exposing the encapsulating material to laser radiation.

31. The method of claim 26, further comprising attaching a solder ball to the bond pad.

32. A method for packaging a microelectronic substrate, comprising:

- mounting the microelectronic substrate to a support member with a first surface of the microelectronic substrate facing the support member and a second surface of the microelectronic substrate facing opposite the first surface;
- electrically coupling the microelectronic substrate to the support member by passing wire bonds through an aperture in the support member and connecting one end of each wire bond to the support member and an opposite end of each wire bond to the microelectronic substrate;
- encapsulating the microelectronic substrate and the support member by disposing an encapsulating material over the support member and the second surface of the microelectronic substrate; and
- directing a source of laser radiation toward the second surface of the microelectronic substrate to remove at least a portion of the encapsulating material adjacent to the second surface and expose the second surface.

33. The method of claim 32, further comprising forming a heat transfer feature in the encapsulating material by removing a portion of the encapsulating material to define an exposed external surface of the heat transfer feature.

34. The method of claim 32 wherein directing the source of laser radiation includes directing a laser beam having a power of from about 4 watts to about 25 watts.

35. The method of claim 32 wherein directing the source of laser radiation includes engaging a laser beam with the encapsulating material to remove a first portion of the encapsulating material and engaging the laser beam with the encapsulating material again to remove a second portion of the encapsulating material initially covered by the first portion of the encapsulating material.

36. The method of claim 32 wherein removing a portion of the encapsulating material includes removing a layer of encapsulating material having a thickness of greater than about 0.003 inch.

37. (Withdrawn)

38. (Withdrawn)

39. (Withdrawn)

40. (Withdrawn)

41. (Withdrawn)

42. (Withdrawn)

43. (Withdrawn)

44. (Withdrawn)

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